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WO 2020/060606 A1 US 20220201525 A1

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(71) Applicant(s):
Olivia Savage Gollner
3 Ladbroke Walk, LONDON, W11 3PW,
United Kingdom

(72) Inventor(s):
Olivia Savage Gollner

(74) Agent and/or Address for Service:
Olivia Savage Gollner
3 Ladbroke Walk, LONDON, W11 3PW,
United Kingdom

(54) Title of the Invention: **Cryptocurrency System Using Electromagnetic Activity Data**
Abstract Title: **Cryptocurrency System which rewards cryptocurrency upon successful verification of data**

(57) A cryptocurrency system that communicates with a user's device to receive and verify electromagnetic activity data, rewarding cryptocurrency upon successful verification. The electromagnetic activity data can be microwaves, infrared or radio frequency, which can be generated using a hash algorithm. The data may involve vectors produced from sensed electromagnetic activity. Verification conditions may include patterns or mathematical properties related to the has of the electromagnetic activity. Rewarding cryptocurrency by generating a block with task information, awarded cryptocurrency details, electromagnetic activity has, and previous block hash, adding it to the blockchain. User tasks may include tests, such as CAPTCHA, to determine human presence. Also claimed is a computer-implemented system for cryptocurrency mining involving task reception, electromagnetic activity sensing, data generation, transmission, verification, and cryptocurrency reward. Also claimed is a cryptocurrency mining system involving sensors, task systems, electromagnetic activity data generation, transmission, and validation by a cryptocurrency system.

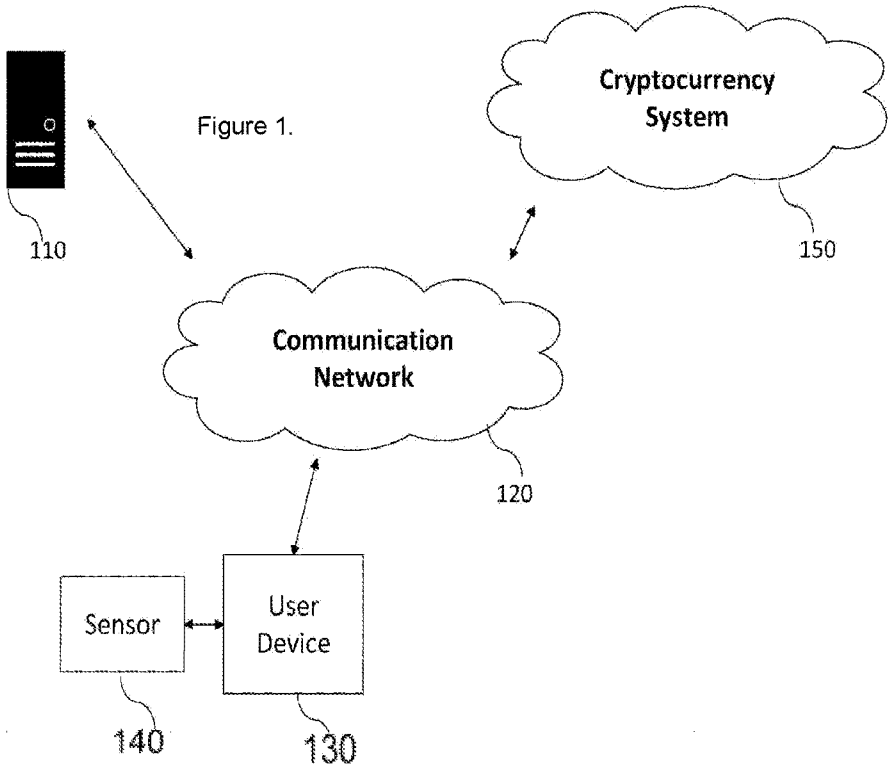

Figure 1.

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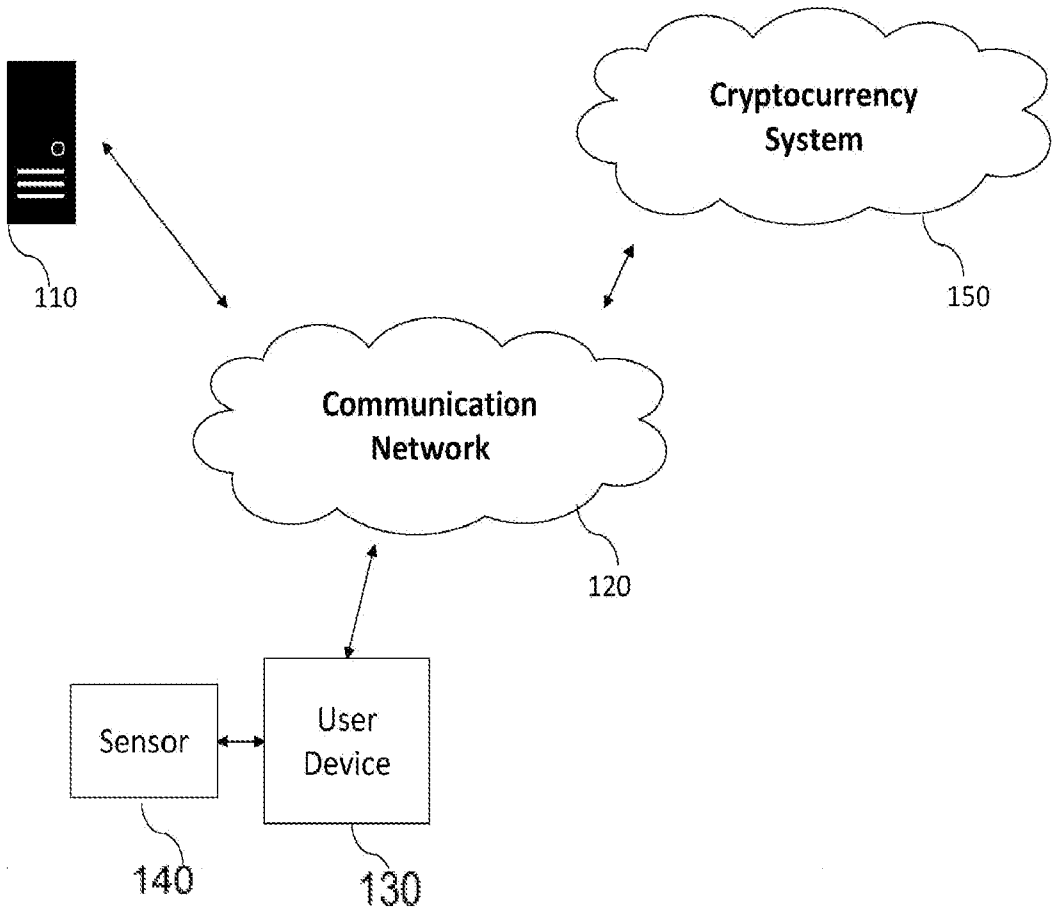
Figure 1.


Cryptocurrency System
110
150
Communication Network
120
Sensor
User Device
140
130

Cryptocurrency Mining System Using Electromagnetic Activity Data

The invention pertains to the field of cryptocurrency mining, particularly to a novel system that employs electromagnetic activity data for generating cryptocurrency.

Cryptocurrency mining is known to consume substantial computational resources and energy. Additionally, concerns have been raised about the environmental footprint and ethical implications of conventional and hypothetical mining practices.

This invention introduces an innovative approach that leverages electromagnetic activity data as a means of performing cryptocurrency mining, thereby addressing the aforementioned challenges.

The proposed system can be implemented as either a centralized or decentralized system, utilizing blockchain or distributed ledger technology. Miners within the system utilize electromagnetic activity data to solve mining challenges and contribute to blockchain expansion.

The accompanying diagram, Figure 1., will now be used to explain the disclosed cryptocurrency mining process as follows:

Figure 1. shows a system of Task Provision, wherein A Task Server (110) communicates tasks to a User Device (130) via a Communication Network (120). These tasks involve the recording of various electromagnetic activity types including radiation, flux and field activity.

Figure 1. also shows a mechanism of Electromagnetic Activity Sensing wherein a Sensor (140) captures electromagnetic activity within a defined context. The user's device, equipped with a sensor, records electromagnetic activity data including Radio Waves, Magnetic Flux, Cellular Network Systems and Microwaves.

Figure 1. shows the system of Electromagnetic Activity Data Generation which is based on the sensed electromagnetic activity, the User Device (130) generates electromagnetic activity data. This data can be symbolically codified or encrypted using hash algorithms.

Figure 1. Shows the system of Cryptocurrency Verification wherein the Cryptocurrency System (150) verifies the generated electromagnetic activity data by checking against predetermined conditions. This validation ensures the authenticity of the data and differentiates it from machine-generated data.

Finally, the Cryptocurrency is rewarded upon successful verification, the Cryptocurrency System rewards the user with cryptocurrency, commensurate with the completed task.

Claims

1. A cryptocurrency system that communicates with a user's device to receive and verify electromagnetic activity data, rewarding cryptocurrency upon successful verification.

2. The cryptocurrency system of Concept 1, where the sensed electromagnetic activity includes various types of data such as microwaves, infrared and radio frequency.

3. The cryptocurrency system of Concept 1, where verification conditions are determined based on the difference in electromagnetic activity associated with the user's device before and during mining.

4. The cryptocurrency system of Concept 1, where electromagnetic activity data is generated using a hash algorithm, including a hash of the sensed electromagnetic activity.

5. The cryptocurrency system of Concept 1, where electromagnetic activity data involves one or more vectors produced from sensed electromagnetic activity.

6. The cryptocurrency system of Concept 1, where verification conditions include patterns or mathematical properties related to the hash of the electromagnetic activity.

7. The cryptocurrency system of Concept 1, rewarding cryptocurrency by generating a block with task information, awarded cryptocurrency details, electromagnetic activity hash, and previous block hash, adding it to the blockchain.

8. The cryptocurrency system of Concept 1, where user tasks include tests (e.g., CAPTCHA) to determine human presence.

9. A computer-implemented system for cryptocurrency mining involving task reception, electromagnetic activity sensing, data generation, transmission, verification, and cryptocurrency reward.

10. The method of Concept 9, where the cryptocurrency system receives electromagnetic activity data before applying a hash algorithm, rehashes the data, and compares it to the hash for verification.

11. A cryptocurrency mining system involving sensors, task systems, electromagnetic activity data generation, transmission, and validation by a cryptocurrency system.

Application No:	GB2316428.8	**Examiner:**	Katie Harbach
Claims searched:	1-11	**Date of search:**	19 December 2023

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-11	WO2020/060606 A1 (MICROSOFT TECHNOLOGY LICENSING LLC) See whole document, particularly claims.
X	1-11	US2022/201525 A1 [THINKRF CORP] See particularly paragraphs [0019] and [0062].

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

Worldwide search of patent documents classified in the following areas of the IPC

The following online and other databases have been used in the preparation of this search report

SEARCH-PATENT

International Classification:

Subclass	Subgroup	Valid From
G06Q	0030/0207	01/01/2023
H04L	0009/32	01/01/2006
H04W	0012/10	01/01/2021